

REMARKS

Claims 1-21 and 23-28 are pending.

Summary of Telephonic Interview

The undersigned wishes to thank examiner Syed for taking the time to conduct a telephonic interview on November 5, 2007. During the interview, the undersigned proposed amending claims 1 and 11 to recite “a change” as opposed to “the change.” Additionally, the undersigned pointed out that paragraph [0041] of the applicants’ specification provided antecedent basis for “a computer-readable medium having computer-readable instructions” as in recited in claim 11. The examiner indicated that the cited passage and the above amendments should overcome the rejections. In addition, the participants discussed the Section 103 rejections based on the Lomet and Hind references.

The discussion focused on whether Lomet taught “flushing the transaction log to the persistent data store, prior to the changed data page being read” as claimed. The applicants pointed out that Lomet actually expressly *teaches away* from the claimed flushing *prior to* reading. The examiner asserted that because MPEP 2141.02(VI) requires a reference to be considered as whole, he felt that it was reasonable to assume that one of ordinary skill in the art would have been led to consider flushing *prior to* reading as claimed, even though Lomet teaches flushing *after* reading contrary to the claimed invention. The applicants’ representative pointed out, however, that Lomet does much more than simply disclose an alternative. Indeed, Lomet expressly *discredits* and *discourages* flushing prior to reading. As a result, one of ordinary skill in the art is led away from the claimed invention by the teachings of Lomet. Thus, this is a classic example of the kind of “teaching away,” *i.e.*, one that expressly “criticize[s], discredit[s], or otherwise discourage[s] the solution claimed,” that should preclude a finding of obviousness. *See* Discussion of *In re Fulton* in MPEP 2141.02(VI).

The interview also focused on whether Hind taught “marking the changed data page to indicate that the transaction log buffer has yet to be flushed to a persistent data store.” The examiner asserted that because Hind disclosed a change number to maintain synchronicity between data records, this teaches marking the changed data page to indicate that flushing has

not occurred. The applicants representative pointed out that Hind makes no reference or mention of flushing data, let alone marking a data page to indicate whether data has been flushed. The examiner agreed to consider these arguments.

Claim Objections

The Office has objected to the specification as failing to provide proper antecedent basis for the claimed subject matter and asserts that correction of claim 11 is required.

The Applicants respectfully disagree and direct the attention of the Office to paragraph 0041 of the Applicants' specification which clearly discloses "a computer-readable medium having computer-readable instructions..." as recited in claim 11.

Accordingly, the subject matter of claim 11 clearly has proper antecedent basis and the Applicants request favorable reconsideration and withdrawal of this objection.

Claim Rejections under 35 U.S.C. §112

The Office has rejected claims 1 and 11 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. Specifically, the Office asserts that claims 1 and 11 recite "the change" in lines 4 and 5 and that there is insufficient antecedent basis for this feature in these claims.

The Applicants have amended claims 1 and 11 to provide proper antecedent basis for all features in these claims. As such, the Applicants request that the Office respond favorably and withdraw these rejections.

Claim Rejections under 35 U.S.C. §103

Generally, claims 1-21 and 23-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,933,838 to Lomet (hereinafter "Lomet") in view of U.S. Patent Publication No. 2004/0024795 to Hind et al. (hereinafter "Hind").

Specifically, regarding claims 1, 11 and 21, the Office directs the applicants' attention to column 5, lines 54-56 and lines 62-65 and column 6, lines 43-48 of Lomet and asserts that Lomet teaches "flushing the transaction log to the persistent data store, prior to the changed

data page being read,” as claimed by the applicants. The Office goes on to further assert that the text “clearly indicates that the flushing the application logs to in a stable log that resides on a stable memory (which is a persistent data store) within a database computer system *is the process of performing a durable read.*”

But this latter assertion is contrary to the claimed invention. As recited in the claims, the present invention involves “flushing the transaction log to the persistent data store, *prior to the changed data page being read.*” Lomet, as the Office appears to recognize, teaches reading prior to flushing, directly contrary to the claimed invention. Indeed, Lomet states in column 6 that

Another aspect of this invention is to optimize the application read operation to *avoid writing the object data read to the log record* (lines 40-42; emphasis added),

and,

However, posting objects to the log [as part of a “flush” operation] often involves writing large amounts of data, and duplicating data found elsewhere on the system (lines 48-50),

and thus,

The read optimizing technique [of Lomet] eliminates posting the read values to the log by substituting, for the read values, an identity of the location from where the values are read and posting the identity instead of the values. However, the data is now only available from the read object itself and *hence, attention must be paid to the order in which objects are flushed to stable storage. If objects are flushed out of proper sequence, a particular state of an object may be irretrievably lost* (lines 52-60; emphasis added).

As these portions of Lomet explain, if the objects in Lomet are not read *before* flushing, there is a chance that the objects will be flushed out of proper sequence which could result in a particular state of an object being irretrievably lost. Thus, Lomet clearly *discourages* “flushing the transaction log to the persistent data store, *prior to* the changed data page being read,” as claimed by the Applicants. Rather, Lomet teaches reading prior to flushing.

As discussed briefly above in the summary of the telephonic interview, the examiner pointed to MPEP 2141.02(VI) as support for the assertion that one of ordinary skill in the art would have been led to consider flushing prior to reading as claimed, even though Lomet teaches flushing after reading contrary to the claimed invention. That section of the MPEP

merely cautions an examiner that “the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed....” MPEP 2141.02(VI). However, where a reference does “criticize, discredit, or otherwise discourage the solution claimed,” it does in fact “teach away” from the claimed invention and should not be used to form the basis of an obviousness rejection under Section 103. That is the case with the Lomet reference here.

The Office further directs the Applicants’ attention to paragraph [0004] of Hind and asserts that Hind teaches “marking the changed data page to indicate that the transaction log buffer has yet to be flushed to a persistent data store,” as also recited in the claims. The Applicants respectfully disagree. What Hind appears to disclose is a method for synchronizing data records between multiple data bases. At paragraph [0004], Hind simply describes identifying that a change has been made to a data record. This is clearly not the same as that claimed by the Applicants. Hind does not teach, and in fact makes no mention or suggestion of, indicating whether a transaction log buffer has been flushed to a persistent data store. Indeed, Hind does not even mention system crashes or “flushing” data and makes only one mention of a persistent data store at paragraph [0166], but this is in reference to where the operating system software should be stored. Nowhere does Hind teach the claimed feature of “marking the changed data page to indicate that the transaction log buffer has yet to be flushed to a persistent data store.”

The Office also asserts that the text in paragraph [0004] of Hind “indicates that a durability indicator is a flag, similar to a ‘change number’ indicating that a change data page has yet to be written.” Again, this is simply not correct. The text in Hind clearly and affirmatively states that the “change number” is for maintaining synchronicity between data records on multiple databases and makes no other suggestion for use of this number.

Because the foregoing features of the claims are neither taught nor suggested by Lomet and Hind, whether alone or in combination, the applicants respectfully submit that the subject matter of claims 1, 11 and 21 is patentably non-obvious over Lomet and Hind. And because claims 2-10, 12-20 and 23-28 each depends from one of claims 1, 11 and 21, the applicants submit that those claims also patentably define over Lomet and Hind. Reconsideration of the Section 103 rejection of these claims is respectfully requested.

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PATENT

CONCLUSION

For all the foregoing reasons, the Applicants respectfully submit that the present application is now in condition for allowance.

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